

SYSTEM AND METHOD FOR AIRCRAFT CABIN ATMOSPHERIC COMPOSITION CONTROL

Abstract

Method and arrangement for adjusting nitrogen and oxygen concentrations within regions of an aircraft. The method includes separating nitrogen from ambient air onboard an aircraft thereby establishing a high-concentration nitrogen supply and then dispensing high-concentration nitrogen from the supply to a fire-susceptible, non-habitable region of the aircraft where the high-concentration nitrogen is reservoired thereby decreasing the capability for the atmosphere therein to support combustion. Oxygen is also separated from the ambient air thereby establishing a high-concentration oxygen supply that is dispensed to an occupant cabin of the aircraft thereby increasing the level of oxygen concentration within the cabin to a level greater than the naturally occurring concentration of oxygen at the experienced internal cabin pressure. When it is determined that reduced oxygen concentration is required in the occupant cabin, the reservoired high-concentration nitrogen is moved into the passenger cabin diluting

the oxygen–elevated environment.